

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-060895  
 (43)Date of publication of application : 06.03.2001

(51)Int.Cl.

H04B 3/03  
 H03M 7/50  
 H04B 1/52  
 H04M 1/00  
 H04M 1/58

(21)Application number : 11-234059

(71)Applicant : MICRO EMUZU:KK

(22)Date of filing : 20.08.1999

(72)Inventor : HIKIMA HIDEO

## (54) TWO-WIRE AND FOUR-WIRE CONVERTING CIRCUIT FOR COMMUNICATION APPARATUS

## (57)Abstract:

PROBLEM TO BE SOLVED: To improve a cancel amount of feed-back and to stably obtain the cancel amount by combining a compressor and an expander with a cancel circuit.

SOLUTION: An input signal from an input terminal 11 passes through an input/output terminal 12 with an op-amp amplifier circuit A1 and a resistance circuit R1 and is outputted to a load Z2. An input voltage G2 from the input/ output terminal 12 is outputted to a load resistance Z1 through an output terminal 10 with the second compressor 17, the resistance circuit R2, the op-amp amplifier circuit A2 and the expander 18. A signal component passing through the output terminal 10 includes the input signal component from the input terminal 11, which is fed-back from the input terminal 11. A cancel circuit 15 is connected to a contact point 13 through a branch circuit consisting of an op-amp inversion amplifier circuit I1 and a gain and phase adjusting circuit 14 by way of the first compressor 16 from the input terminal 11 and, then, the input signal component from the input terminal 11 is cancelled by the resistance circuit R2 and the branch circuit.

